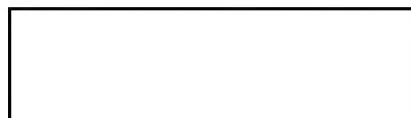


20XC-5707  
COPY 1 OF 2

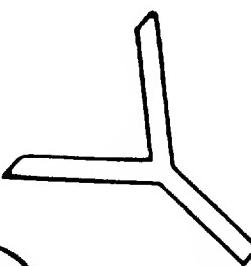
AM-881

19 September 1963



25X1A

25X1A

SUBJECT: Neck Seal Suit

Dear Ed:

Joe has experienced some difficulties in getting the two suits for Lou & Bill modified as scheduled. At present, these units should be delivered to you by September 30th.

As you know, we have not exposed any of the Drivers to the heat pulses in our chamber with this neck seal. The heat combined with the lack of ventilation in the head cavity could possibly cause extreme personal discomfort and a reduction in personal efficiency.

Therefore, before utilizing this type garment for oxygen consumption evaluation training flights, it would be advisable to have one of your Drivers with his neck seal garment go through the long heat profile run in our chamber.

Please advise as soon as possible.

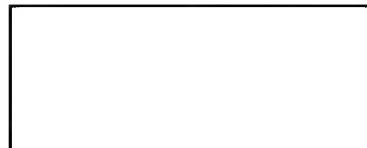
Very truly yours,



25X1A

P

cc:



25X1A

Approved For Release 2002/07/30 : CIA-RDP75B00285R000300180008-2

ILLEGIB

Approved For Release 2002/07/30 : CIA-RDP75B00285R000300180008-2

25X1A

CC:

Approved For Release 2002/07/30 : CIA-RDP75B00285R000300180008-2

**Memorandum**

25X1A

25X1A

To

From

Re PRODUCTION PARACHUTES

Date 7/25/63

CONTRACT AT PRESENT CALLS FOR 35 CHUTES ON  
 "A" SYSTEM 9 CHUTES ON "AF" SYSTEM FOR A TOTAL  
 OF 44 CHUTES.

QTY.

④ → 4	S/N 1, 2, 3, 4	WERE OF AN OBSOLETE CONFIGURATION AND MUST BE REBUILT
6	S/N 5, 6, 7, 8, 9, 10	ARE PRESENTLY BEING REWORKED TO THE LATEST CONFIGURATION AND WILL BE AVAILABLE FOR USE BY 8/19/63
6	S/N 11, 13, 14, 15, 16, 17	ARE PRESENTLY IN SERVICE
1	S/N 12	LOST DUE TO DAMAGE
4	S/N 18, 19, 20, 21	SCHEDULED FOR DELIVERY BEFORE 7/29/63
4	S/N 22, 23, 24, 25	SCHEDULED FOR DELIVERY BEFORE 8/5/63
20	As Of This Date There Are	6 CHUTES IN SERVICE
	As Of 7/29/63 There Should Be	10 CHUTES IN SERVICE
	As Of 8/5/63 There Should Be	14 CHUTES READY FOR SERVICE
	As Of 8/19/63 There Should Be	20 CHUTES READY FOR SERVICE

TOTAL CONTRACT ----- 44 UNITS  
 COMPLETED OR NEAR COMPLETED ----- 21 UNITS \*  
 BALANCE TO BE BUILT ----- 23 UNITS

\* ONE LOST BRINGING TOTAL TO 20 OPERATIONAL RIGS

June 11, 1963

25X1A



25X1A

Dear [redacted]

25X1A

[redacted] reports that Parachute, S/N 17, had a quarter bag which was below tolerance on approximately ten (10) flutes. The pull forces required for the subject flutes were down to six (6) to eight (8) pounds.

It was noted that you had returned to your zig-zag stitching on this bag. Is this an error? Is it possible you had used an old bag? Please advise and take necessary corrective action to remedy these discrepancies in future deliveries.

25X1A

[redacted] has just reported that he has spent approximately one hour trying to file down one of the Forge Craft ejector release snaps in the test parachute at El Centro. I believe that it is imperative that at this time we insist that you use only Otterbine release snaps as this is posing too much of a problem in the field.

Very truly yours,

THE FIREWEL COMPANY, INC.

25X1A

p

25X1A



25X1A

cc: [Approved For Release 2002/07/30 : CIA-RDP75B00285R000300180008-2]

AM-668  
March 20, 1963

25X1A

25X1A

[REDACTED] SUBJECT: Suit Modifications

Dear Joe:

25X1A At a meeting with [REDACTED] last Friday, the following information was transmitted as an official request for changes. Some of these have been discussed at other meetings, however, use this as an official transmittal.

- (1) Remove the spurs from the boots
- (2) Remove identification from the boots
- (3) The bottoms of the boots are to remain as they were originally. This information supersedes the original request to make the ankles and heels of the single flat form type.
- (4) The underwear is to be colored olive drab.

This information is current, and should there be any changes, we will advise you.

Yours truly,

S

25X1A

AM-311

February 1, 1963



25X1A

Dear Ed:

(1) Qualify O<sub>2</sub> System to 2500 PSI

Per your letter of December 26th, we are proceeding with the analysis, test and qualification of the oxygen system components for 2500 psi operation. Some of the functional and qualification testing work is reported in our Document No. DN 0100 dated January 3, 1962 and is applicable to this problem.

(a) High Pressure Reducer

The component affected is principally the high pressure reducer, as described on Page 40 and 55 of the above mentioned document. We have run flow tests to a supply pressure of 2950 psi at a temperature of 400°F. According to the thermo regime graph you gave me in June, the maximum temperature is not realized until over two hours from take-off. At a nominal breathing rate of 15 LRM drawing from both bottles equally the bottle pressure in two hours has been reduced to 2150 psi without allowance for the 20 to 30 minute ground stand-by. A 20 minute ground stand-by, we estimate, would reduce the bottle pressure an additional 150 psi or to a 70°F bottle pressure of 2000 psi. Therefore, with the bottle pressure decreasing with usage and increasing with increasing temperature, we do not see how the bottle pressure can ever exceed that to which we have already tested. However, we are scheduling additional functional and qualification tests for all components.

From the tests already run, it is apparent that we may have to shift the performance schedule to maintain sufficient margin over the minimum system functioning pressure of 50 psi at max flow. This is shown quite plainly on the graph of Page 45 of the referenced document.

During conversations with [redacted] we have been told that the present maximum temperature in the installation bay is 275°F. Can you verify this change in temperature?

25X1A

February 1, 1963

**(b) Self Checking Valve - DN 213 00-1**

The self checking valve with integral burst disc was subjected to the test mentioned under the foregoing Section A. Any tests performed on the reducer will automatically be performed on the self checking valve. Burst disc design will remain as is.

**(c) Pressure Warning Switch - DN 601 00-1**

To be requalified for higher pressure. We anticipate no change in design but must requalify.

**(d) High Pressure Oxygen Gage - DN 222 02-1**

We have requested quotations for higher performance gages - as yet we have had no replies from the vendors.

**(e) Filler Valve - DN 215 02-1**

Functional and leakage to be rechecked at the higher pressure.

**(f) Panel Assembly - DN 203 50-1**

We are waiting for a requote from the gage vendor on the change in nominal system pressure from 140 to 160. We anticipate no changes in the valve design. The all metal off-on valve will shut-off the system when system pressure is 600 psi which is considerably above the 140 psi relief pressure.

**(g) Bottle Assembly - DN 225 00**

We have not yet received prices or delivery schedule on the 952 cubic inch bottle. We anticipate these within the next 10 days.

**(2) Parachute**

25X1A

The items listed in your letter of January 23rd were the same as those reported verbally by [redacted]. The principle problem area not resolved by these two engineers is agreement on the size of the 'green apple' retention. Jim has a couple of thoughts on this problem that he will discuss with George when in El Centro next week. He will also discuss the

25X1A

February 1, 1963

pack wear and opening elastios at that time. The Electro-plating problem is being discussed with [redacted]. The full contract hardware has not been ordered and will not be ordered until [redacted] guarantees plating quality.

25X1A

25X1A

### (3) Emergency Off-On Valve

I sent [redacted] copies of our emergency off-on valve. We have hardware built and tested on these two approaches.

Proposal No. 1 - We had to use tandem spring as the 70 pound springs were not readily available. The principle draw back on this item will be that the [redacted] both valves must be positioned at the same time requiring a cocking force of 140 pounds to depress the spring thus increasing 'green apple' pull as well as package size. We much prefer Proposal No. 2 with its smaller package and greater simplicity. When we have completed our functional tests in the next few days on these articles, we will send the information to you before we begin qualification tests.

Any additional performance requirements or added qualification tests you feel necessary, we will include in our test program.

### (4) Equalizer Valve

Enclosed is a sketch of the revised equalizer valve design which we have nearly completed. This item should be ready for initial tests by February 6th. This unit is a revision of the loaded piston as described in my letter of January 22nd. In this approach we eliminate concentricities and are concerned with the mating of one internal and one external diameter only. Our first approach to this article is a sealless metal to metal design. The leakage past the sealless piston was less than 100 cc for a differential of 100 psi. We anticipate a leakage of no greater than 50 cc in this design.

25X1A

February 1, 1963

(5) As you requested, we are enclosing a full set of manufacturing drawings on our dual helmet regulator. We would like to be kept informed as to your progress and concepts for solutions to this problem of control of system diversions.

(e) Consumption Data

Enclosed is our report on consumption studies of [redacted]. These tests were completed January 18th. We ran controlled tests at rest to check our consumption data obtained last year. This repeated the approximate 9.5 LPM in the normal seated attitude.

With the subject following a prescribed movement and talking schedule, movement - principally head and torso activity, the increased activity rate is in the nominal 14 LPM range. These tests, as described in the report, were conducted over a period somewhat less than the original 8 hour run but a duration long enough to give us definite information as to changes in consumption rates. The subject was fully suited in the S901 suit and at an altitude of 26,000 feet.

We have completed indoctrination training of subject [redacted] on January 30th. We anticipate transmitting the report document to you by February 7th.

Best regards,

p

Enc.

25X1A

AM-613

February 1, 1963



25X1A

Dear Harry:

Enclosed are the panel assembly drawings which you requested to enable you to discuss the reasons for the cost change.

*See Drawing  
folder - Item 1* - F6642-203-40 is the latest revision to the panel assembly. It is the same as the 'A' System except that it does not have the dual gage. The recent change to eliminate the soft seat off-on valve plus the change from a quantity price of 100 units to 8 units are the principle areas of difference.

Our void drawing, F6642-230-02, shows the old valve assembly using the standard off-on valve we have been using in airborne oxygen systems for the past ten years. [redacted] requested removal of all rubber elastomers from the system principally in the pressure switch, high pressure reducer and on-off panel.

25X1A  
The new off-on valve assembly is shown on the F6642-203-53 Drawing. It is a metal to metal seat with actuating bellows assembly. This unit requires precision tolerance to minimize leakage and reduces assembly problems. In addition you will note we have changed the inlet and outlet ports. This was necessary to accommodate the necessary changes in internal valve flow paths.

Another reason for price increase is the fact that the previous designs were all of aluminum construction and this design is all stainless steel including the valve ball and bellows assembly.

If you require additional information we will do our best to supply same to you or [redacted]

25X1A

25X1A

[redacted]

AM-613

February 1, 1963

25X1A

Enclosed is a copy of the Equalizer valve we are building for test. [redacted] claims he can contour this unit to fit in the helmet but for the present we are considering mounting it on the hoses under the suit as discussed with you and [redacted]

25X1A

Also enclosed are our sketches of the emergency off-on valve which has been a source of trouble in the field. We have had five occasions of emergency supply depletion in 110 test flights. This is not tolerable and we are going to change the valve design as discussed with you this week. I much prefer Proposal No. 2 for reasons stated in the enclosed letter sent to [redacted]

25X1A

Best regards,

J. W. [redacted]

Bob

p

Enc.